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delineated in the bas-reliefs, showing how little the barbarous inhabitants of these great swamps have changed after the lapse of nearly three thousand years."

The bas-relief which has been reproduced in our second illustration represents a woman, barefooted, carrying some vessel in her hand, followed by four camels. The foremost of the animals has a halter depending from his head; and all the figures are executed with considerable fidelity and spirit. The glimpses which we obtain into the every-day life of the Assyrians by means of these bas-reliefs reveal customs and modes that have been perpetuated to the present day; but in all the higher arts the glory of the land has departed. Mounds of earth cover the palaces of Sennacherib and Sardanapalus, and where their banners flaunted in the sunlight as they led their thousands forth to battle, the traveller now beholds only the tents of the wandering Arabs.

## HEALTH OF TOWNS.

THAT it is healthier to live in the country than in large towns, is a plain matter of fact which experience renders familiar to all. But it is only within a comparatively short period that any attempt has been made to investigate the causes of this effect; though without such an investigation it is obviously impossible to devise any means at all likely to be effectual in improving the health of towns. If we would arrive at an intelligent view of the subject, we must carefully consider the phenomena which are engendered in the course of years by the impregnation of the soil of cities with substances which are deposited there in the shape of refuse, or gradually accumulate from various sources. Everything that comes into contact with man partakes more or less of the character of clothing, and is similarly affected by the action of those causes which are in constant operation wherever men are collected together. Clothes, as we all know, require to be frequently washed and changed; and if we cannot cleanse and renew the soil upon which we tread, and the emanations from which are constantly rising about us, we ought at least to endeavour to maintain its natural purity as far as lies in our power.

Let the soil be impregnated with organic matter of various kinds; let it receive water enough to moisten it, but not enough to cleanse it; let this water be charged with a solution of sulphate of lime, which, by its combination with the organic substances buried in the soil, will give rise to the most noxious and poisonous gases; let the ventilation which might have carried off these deleterious emanations be impeded; let light, which facilitates the slow combustion of organic substances, be prevented from often reaching the ground; and we have combined all the conditions necessary to render the soil a pest-house of infection, a dreadful swamp under the show of splendour, whence silently go forth day and night the treacherous agents of so many diseases, which are in reality nothing but the natural and necessary results of this concealed corruption. Such, it cannot be denied, are the conditions to which culpable neglect too often gives rise in large towns, even in this enlightened age. Much has been said of late years about the health of towns, and something has been done towards its promotion; but those whose personal observation has made them best acquainted with the subject, are the loudest in their demands for further improvement.

The usual causes of the accumulation of those substances which tend to render the soil of large towns prejudicial to health, are, the necessity we are under of using organic substances for food, and the various consequences of that use, the employment of these substances in manufactures, the domestic animals which live among us, and the human corpses which were formerly—and are sometimes even now, if the statements in the public press are to be believed—buried in the heart of towns, and, wasting away by decomposition, after a number of years form a large mass of putrid matter. In towns lighted by gas—that is to say, in all towns of any extent—there is an additional cause of infection, and one which, if not counteracted, may become, in time, productive of immense mischief. This is the development of vapours which, after being carried along with the gas in the pipes, issue through the escapes, and spread in the earth, giving it a fetid smell that

betrays itself when there is any digging for repairs, make trees wither and perish by poisoning the roots, and taint the water in wells.

It is obvious from the above remarks, that the means of preventing the soil from getting into an unhealthy state must consist mainly in endeavouring to diminish, as much as possible, the quantity of organic substances which penetrate into the earth. The most customary and simple plan is, to pave the streets with stone. Independently of the advantages of this plan on the score of convenience for traffic, and the prevention of the formation of ruts and puddles, it evidently diminishes the permeable portion of the soil, since it is only through the interstices between the stones that anything can reach the earth beneath.

Among other means of accomplishing this important object, the following deserve special mention. There should be numerous water-plugs frequently, if not constantly, open, so as to pour into the gutters a body of water sufficient to carry off all the filth from the houses before it has time to sink into the soil. Sewers and drains should be plentifully laid down and kept thoroughly watertight. To prevent the dispersion of the vapours and fluids engendered by the gas, some recommend that the gas-pipes should be placed inside the sewers. It is alleged that such an arrangement would render the repair of escapes more convenient, but on this point there is some room for a difference of opinion. Cemeteries should be placed not merely quite out of the town, but also below its level; for if the water which runs through the soil finds its way by subterranean imbibition to the soil of the town, it is evident that the evil, against which we are anxious to guard, will be secretly gaining ground. Every species of manufacture which gives out much organic matter ought to be removed to a distance from the town, or carried on close to a stream of water, powerful enough to carry off everything of this sort at once. Lastly, the strictest vigilance should be exercised over all gardens, markets, and other places where organic substances are likely to accumulate.

But, besides resorting to such preventive measures as the above, it is of the greatest importance to employ suitable means for counteracting the infection which already exists in the soil. It is a fact, to which we can no longer shut our eyes, that in almost all our considerable towns the soil is more or less infected. This fact was prominently brought before the public mind with regard to London, in a recent report, drawn up with great ability by Mr. Simon, the medical officer to the City Board of Health. Unfortunately, it is not so easy, in the present state of our knowledge, to discover a remedy for the evil as to state how it might have been avoided. In this, as in other cases, prevention is better than cure.

The first step should be to let the oxygen of the atmosphere have free circulation wherever there are organic materials capable of becoming injurious to health by decomposition. It is well known that oxygen, especially when aided by the influence of light, has a tendency to convert organic matter into water, carbonic acid, and nitrogen, by a slow combustion, which, from the moderation of its action, involves no sort of danger. Thus, oxygen is a powerful agent, which destroys the sources of infection whenever it is brought into contact with them. Besides, the air, by penetrating freely into every hole and corner, has a tendency to dry the earth, the streets, and the walls of the houses. Hence, not only ought the streets to be of sufficient width, but the yards at the back of the houses should be large enough to admit the fresh air to that side as well as the other, for if this is not the case the work of purification is only half done.

The next means to be employed consists in the use of wells, a means which has never yet received a fair trial, but which, with proper management, is capable of being turned to good account. A single experiment by a skilful engineer may suffice to demonstrate this. Having sunk a well in an old farm-yard, the soil of which had been long impregnated with the manure to a considerable depth, he could not get any water from the well at all fit to drink, though the water of another well, situated at a little distance above this, was excellent. However, by dint of working the well, and using the water from it for purposes of cultivation, he at last succeeded in completely changing its condition. The water gradually lost its colour and its smell, till in the course of a few years it

became quite fit to drink. It is evident that, in this case, the well performed the part of an emunctory. It served to wash the body of the soil by means of the water which was drawn down to it, dissolving and bringing with it the animal substances through which it passed. This action is naturally very slow, and depends upon the quantity of rain-water imbibed by the earth, and flowing down to the interior of the well; but it cannot be denied that, in general, when there are many wells in a town, they contribute to the gradual purification of the soil, especially if, at the same time, the preventive measures above indicated be adopted. But here an important observation suggests itself with regard to paving, and that is, that the paving, which in some degree prevents the soil on which towns are built from being penetrated with infectious matter, in the same degree prevents it from being cleansed by the rain which falls upon it, and would otherwise sink into it. This was remarked by the sagacious Franklin, who, in his will, observed that the soil of towns being paved and covered with houses, the rain is carried off, instead of penetrating the earth and renewing and purifying the springs; in consequence of which the water from the wells becomes worse every day, till in old towns it is not fit to drink. He therefore recommended the municipal authorities of Philadelphia to have water conveyed thither from Wissahickon Creek by means of pipes. There is evidently no other means of remedying the evil than to have pure water laid on from without; but at the same time it is desirable not to abandon the use of wells wherever they can be sunk, because of their valuable action as emunctories, when the subterranean water that gradually accumulates in them is occasionally exhausted.

A third resource, and one which is likely to be more effectual than any other, consists in the raising of plantations near the town. As an eminent engineer observes, if the utility of trees in preventing the impoverishment of sloping ground, and mitigating the evil effects of violent or continuous rain, is undeniable, they must be no less serviceable in constantly counteracting the unhealthiness produced, or on the point of being produced, in populous towns by organic matter and the excessive dampness of the soil. The roots of the trees, by spreading out in all directions within the soil, relieve it of the moisture, charged with organic and saline materials, that it has imbibed. At the same time the more distant portions

of the roots, by virtue of the law of capillary attraction, give back to the earth a portion of the water with which they are overcharged; and thus, if the trees are sufficiently numerous and suitably arranged, a subterranean circulation is established. Hence we have here self-acting emunctories, far more efficient than wells, because they can be multiplied to a greater extent. It has been ascertained by experiment that a sunflower, placed in a glazed flower-pot covered with a sheet of lead, so as merely to let the stem come through, will evaporate as much as twenty-eight pints of water in the course of only twelve hours. What, then, must have been the quantity if the experiment had been made upon a tree? At the same time that the water is thus drawn off, it is purified. The pure liquid is diffused through the atmosphere, and contributes to freshen and improve the air. The salts and organic substances are absorbed by the roots, and serve as nourishment to the tree; so that, by this happy combination, the very deleterious substances themselves are employed to sustain the agents destined to counteract them. But in proportion to the efficacy of this measure in promoting the health and improving the aspect of towns, is the necessity of careful consideration with regard to the number and arrangement of the trees in different quarters, the choice of such as are suitable for their respective positions, and the steps to be taken in order that the roots, as they extend, may meet with sufficient nourishment without ever passing through beds impregnated with substances that are deleterious, or deprived of the oxygen of the atmosphere. Unless these precautions are adopted, the success of the method must be greatly impaired, if not altogether nullified, because the plantations cannot thrive.

We have yet much to learn on this subject, but when the public mind is more fully alive to its importance, it is to be hoped no method will be left untried which has any chance of proving effectual. Surely if anything were needed to convince even the most obtuse and inert of the urgent necessity of prompt and vigorous measures of some sort, the recent outbreak of that dreadful pestilence which is now making such fearful havoc in almost every portion of the globe, is more than sufficient for the purpose. A matter of this sort should neither be left entirely in the hands of official authorities, nor be altogether beyond their control. There must be a co-operation between private individuals and public bodies.

## THE ENTRANCE TO THE ARSENAL AT VENICE.

THE tragedies of Shakspeare and Otway, the descriptive poetry of Byron and Rogers, and the truthful pictures of Canaletto, have given to non-travelling people a more distinct impression of Venice than of any other continental city. But the Queen of the Adriatic has another fame than that which she derives from the Muses. Unassociated as she is with classic memories and remains, Venice was, ere she fell, through her degeneracy, under the yoke of Austria, the oldest of the modern states of Europe. She dated her rise seven centuries earlier than the emancipation of the towns of Lombardy, and her independence survived that of Florence by three hundred years. "Venice," says Sismondi, "witnessed the long agony and the termination of the Roman empire; in the West, the birth of the French power, when Clovis conquered Gaul; the rise and fall of the Ostrogoths in Italy, of the Visigoths in Spain, of the Lombards, who succeeded to the first, of the Saracens, who dispossessed the second. Venice saw the empire of the caliphs rise, threaten to invade the world, divide, and decay. Long the ally of the Byzantine emperors, she, by turns, succoured and oppressed them; she carried off trophies from their capital; she shared their provinces, and joined to her other titles that of a fourth and a half of the Roman empire. She saw the Eastern empire fall, and the ferocious Mussulmans rise on its ruins. She saw the French monarchy give way; and alone, immovable, this proud republic contemplated the kingdoms and the nations which passed before her. But, after all the rest, she sunk in her turn; and the state which linked the present to the past, and joined the two epochs of the civilisation of the universe, has ceased to exist."

But, long before the period of her final downfall, the naval power of Venice had departed and her commercial greatness passed

away. The discovery of the Cape route to India struck a severe blow at her commerce, and, together with the discovery of America, and the new direction thereby given to commercial enterprise, injured her more than the league of Cambray or the fleets of the Ottomans. Spain and Portugal rose in power and wealth as Venice declined. Under the Austrian rule, the last remains of her commerce have been transferred to Trieste; and now her quays are deserted, the Rialto is no longer a place "where merchants must do congregate," and on her sleeping canals

"Silent rows the songless gondolier."

The buildings which recal the former commercial greatness and naval power of Venice are the Dogana, or custom-house, the mole, and the arsenal, but the two former are of comparatively recent construction. The custom-house dates only from the 17th century, and the mole was constructed in the 18th to fill up the gaps between the low islands next the sea, and protect the port from the swell of the Adriatic. The arsenal, which dates its foundation as far back as the year 1304, and which the Republic, in the days of its prosperity and glory, repeatedly enlarged and embellished, is surrounded by strong walls and towers. Its entire circumference is estimated at more than two miles. The principal entrance on land, which is here engraved, is in itself a magnificent monument. The arch of the door is decorated with sculptures executed at the close of the sixteenth century by the disciples of Sansovino; the four marble columns which support the pediment and entablature are more ancient, having been executed or conveyed here about A.D. 1460, according to general belief. It was natural that the lion of St. Mark should be placed above the arch as the guardian and pro-